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Application Number Herewith Filing Date First Named Inventor Chen et al Group Art Unit **Examiner Name**

(use as many sheets as necessary) 100202586-5 **Attorney Docket Number** of 6 Sheet

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Examiner Initials	Cite No.1	Mumbar	Code ²	of Cited Document	Cited Document MM-DD-YYYY	Passages of Relovant Floures Appear
		20020079432	Al	Lee et al.	06-27-2002	
		20020075554	Al	Brophy et al.	06-20-2002	
		20020070723	Äl	Herbert et al.	06-13-2002	
		20020061160	A1	Solgaard et al.	05-23-2002	
	l	20020054422	A1	Carr et al.	05-09-2002	
		20020041735	A1	Cai et al.	04-11-2002	
		20020033048	_	McIntosh et al.	03-21-2002	
	1-	20020021860		Ruan et al.	02-21-2002	
	 	20020018334	\rightarrow	Hill et al.	02-14-2002	
	1-	20020003661		Nakai	01-10-2002	
	 	20010051014		Behin et al.	12-13-2001	
	+	20010038254	_	Dhuler	11-08-2001	
	+	20010030817	_	Hagelin et al.	10-18-2001	·
	 	20010017358		Dhuler et al.	08-30-2001	
	1	20010008357	A1	Dhuler et al.	07-19-2001	
	+	6,410,361	B1	Dhuler et al.	06-25-2002	
	1	6,409,198	B1	Weimer et al.	06-25-2002	
	+-	6,407,478	B1	Wood et al.	06-18-2002	
	+	6,389,190	B2	Solgaard et al.	05-14-2002	
	+	6,386,507	B2	Dhuler et al.	05-14-2002	

				FORE	IGN PATENT DOCUMENT	rs	<u></u>	
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nitials*	No.1	Office3		nown)	Applicant of Cited Document	MM-DD-YYYY	Figures Appear	T°
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				U.S. PATENT DOCL	IMENTS	
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		6,377,438	B1	Deane et al.	04-23-2002	
		6,374,008	B2	Solgaard et al.	04-16-2002	
		6,360,036	B1	Couillard	03-19-2002	
		6,329,738	B1	Hung et al.	12-11-2001	
		6,307,663	B1	Kowarz	10-23-2001	
		6,289,145	B1	Solgaard et al.	09-11-2001	
		6,275,325	B1	Sinclair	. 08-14-2001	
		6,275,320	B1	Dhuler et al.	08-14-2001	
		6,255,757	B1	Dhuler et al.	07-03-2001	
		6,211,598	B1	Dhuler et al.	04-03-2001	
		6,137,206	B1	Hill	10-24-2000	
		6,067,797	B1	Silverbrook	05-30-2000	
		5,905,571	B1	Butler et al.	05-18-1999	
·	 	5,561,558	B1	Shiono et al.	10-01-1996	
	T .	5,069,419	B1	Jerman	12-03-1991	
 	T	3,216,315	B1	Keller	11-09-1965	
	 	3,045,532	В1	Staunton	07-24-1962	
		5.757.536		Ricco et al	5/26/98	
		6.428.173		Dhuler et al	8/6/02	
	 	6.329.738		Hung et al	12/11/01	

				FOR	EIGN PATENT DOCUMENT	S		
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	_	V. RAMACHANDRAN et al., An assessment of the blazed grating electro-optic deflector, J. Phys. D: Appl. Phys. Vol. 8, 1975	
		K. E. PETERSEN, Micromechanical light modulator array fabricated on silicon, Appl. Phys. Letters, Vol. 31, No. 8,	
		M. H. BRODSKY et al., Color Projection Deformographic Display using Silicon Micromechanics and Optical Diffraction, IBM Technical Disclosure Bulletin June 1 1980 pp. 394-395	
		W. B. PENNEBAKER, Projection Display with Blectrochemically Created Grating Structures, IBM Technical Disclosure Bulletin, June 1 1980 pp 397-400	
		M. MAYSTRE et al., Optimization of a wavelength demultiplexer in fiber optics using gold echelette gratings, Proc. SPIE - Application Theory, and Fabrication of Periodic Structures.	
		R. E. BROOKS, Micromechanical light modulators on silicon, Optical Engineering, Vol. 24, No. 1, Jan./Feb. 1985, pp. 101-106	
		J. A. STEIN et al., A Display Based on Switchable Zero Order Diffraction Grating Light Valves, Advances in Display	
		P. PHILIPPE et al., Wavelength demultiplexer: using echelette gratings on silicon substrate, Applied Optics, Vol. 24 No. 7,	
		S. R. MALLINSON et al., Miniature micromachined Fabry-Perot interferometers in silicon, Electronics Letters, Vol. 23 No. 20 . Sept. 24. 1987, pp. 1041-1043	
		J-P. LAUDE et al., Wavelength division multiplexing/ demultiplexing (WDM) using diffraction gratings, Proc. SPIE - Application, Theory, and Fabrication of Periodic Structures SPIE Vol. 503 Aug. 21-23, 1984, pp. 22-28	
		P. HESKETH et al., Anomalous Emissivity from Periodic Micromachined Silicon Surfaces, Technical Digest IEEE Solid-State Sensors Workshop, June 1986 (reprinted in "Micromechanics and MEMS - Classic and Seminal Papers to 1990") June 1986	

Examiner	 Date	
Signature	Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Oraw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	_	OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS						
Examiner Initials*	Cite No.1	to.1 kem (book, magazine, journal, serial, sympostum, catalog, etc.), date, page(s), volume-lesue number(s), publisher, city and/or country where published.						
		W. EHRFELD et al., Fabrication of Microstructures Using the LIGA Process, Proceedings IEEE Micro Robots and Teleoperators Workshop Nov. 1987 (reprinted in "Micromechanics and MEMS -						
		O. SOLGAARD et al., Deformable Grating Optical Modulator, Optics Letters, Vol. 17, No. 9, May 1, 1992, pp. 688-690						
		D. E. SENE et al., Development and characterization of micromechanical gratings for optical modulation, Proc. IEEE MRMS-96 June-96 pp. 222-227						
		D. M. BURNS et al., Micro-electro-mechanical variable blaze gratings, Proc. IEBE MEMS-97 Workshop, Nagoya Japan, Jan. 24,						
		R. K. MALI et al., Development of micromechanical deformable mirrors for phase modulation of light, Optical Engineering,						
		M. L. SCOTT et al., Gray Scale Deformable Grating Spatial Light Modulator for High Speed Optical Processing, Smart Structures and Materials 1997. Smart Electronics and MEMS						
		D. M. BURNS et al., Optical beam steering using surface micromachined gratings and optical phased arrays, Optical Scanning Systems. Design and Applications SPIR Vol 3131 July						
		D. ARMITAGE, Diffractive Projection Displays, Projection Displays II, SPIE Vol. 3013, May 1, 1997, pp. 112-125						
		D. M. BLOOM, The Grating Light Valve: revolutionizing display technology, Projection Displays II, SPIE Vol. 3013, May 1,						
		M-H KIANG et al., Surface-micromachined Diffraction Gratings for Scanning Spectroscopic Applications, TRANSDUCERS '97, 9th Int. Conf. on Sensors and Actuators, IEEE and Transducers Research Foundation, 16-19 June 1997, Chicago, IL., June 16-19 1997						
		R. ALLAN, Reflective Color Flat-Panel Display Developed From A Deformable MEMS Optical Modulator, Electronic Design, June 23, 1997						

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		D. M. BURNS et al., Development of microelectromechanical variable blaze gratings, Sensors and Actuators A:Physical,	T			
		D. T. AMM et al., Optical Perfomance of the Grating Light Valve Technology, SPIE Conference on Projection Displays V, SPIE Vol. 3634. Jan. 1999. pp. 71-78				
		D. C. McCARTHY, Photonic Switches: Fast, but Functional?, Photonics Spectra, March 1, 2001, pp. 140-150	T			
			T			
			ľ			
		ANON, All the Good Bits: Displaying and Printing Digital Pictures, http://www.kodakkorea.co.kr/US/en/corp/researchDevelopment/tech nologyFeatures/gems.shtml, Feb. 2002				

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Applicant(s)/Patent Under Application/Control No. Reexamination 10/280,995 CHEN ET AL. Notice of References Cited Art Unit Examiner 6 of 6 Jack Dinh 2873 U.S. PATENT DOCUMENTS **Document Number** Date Classification Name Country Code-Number-Kind Code MM-YYYY 250/237G 04-1991: Spillman, Jr., William B. US-5,012,090 359/571 12-2002 Fabiny, Larry US-2002/0196546 В US-C D US-US-Ε F UŚ-G US-Н US-US-US-J US-Κ L US-M US-FOREIGN PATENT DOCUMENTS Document Number Date Classification Name Country Country Code-Number-Kind Code MM-YYYY Ň 0 Q R S T NON-PATENT DOCUMENTS Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) U

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Notice of References Cited

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